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ABSTRACT

This study attempts to test (via multiple regression analysis) hypothesized relationships between designated independent variables and age specific incidences of labor force participation for black male subpopulations in 54 Standard Metropolitan Statistical Areas. Leading independent variables tested include net migration, earnings, unemployment, education, percent inmates of institutions, and residential segregation. Other variables, believed less important theoretically or serving as controls, include percent black, percent in the armed forces, and industry mix (percent of employed black males in manufacturing). As anticipated, net migration, earnings, and unemployment emerge as leading determinants of labor force participation rates. But, in contrast to findings of past related research, there is scant evidence of expected positive education effects; this result underscores the problematic status of the "credentialism" or "demand for education" thesis. (CMG)

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BLACK MALE LABOR FORCE PARTICIPATION

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Introduction

Over past decades labor force analysts have sought to account for areal variation in the labor force participation rates of various subpopulations [Douglas, 1934; Long, 1958; Bowen and Finegan, 1969]. Their attention has focused upon a growing number of determinants or explanatory variables; and results of cross-sectional aggregative studies have mirrored recurrent evidence of meaningful relationships. But their efforts have precluded a scrutiny of areal or market variation in black labor supply within a broad multivariate framework. Clearly, this is a sine qua non to a better understanding of conditions facilitating depressed worker participation rates and wasted manpower utilization among blacks. The lack of any such inquiry partly accrues from a dearth of appropriate data. For prior to 1970, the U.S. Census of Population contained detailed statistics at the SMSA level for nonwhites only. This meant a confounding of data for highly disparate racial groups: a condition perhaps most acute in some SMSA's in the West where American Indians or Oriental Americans made up sizable proportions of nonwhite subpopulations. To what extent this situation has distorted past areal analyses (where it was presumed that references to nonwhites and blacks could be made interchangably) is unknown. However, recent research does reveal important discrepancies between the worker patterns of blacks and other racial minorities [Sullivan, 1978].

Beginning with the 1970 U.S. Census of Population a plethora of germane and detailed data became available for blacks in selected SMSA's. This study, availing itself of these data, seeks to explain variation across SMSA's in the age specific labor force participation rates of black

males.[1] The multiple regression method of analysis is used to test hypotheses based upon past theory and research. Leading independent variables comprise net migration, earnings, unemployment, education, inmates of institutions, and residential segregation. Other independent variables, believed less important theoretically or serving as controls, include percent black, percent in the armed forces, and industry mix (percent of employed black males who are in manufacturing). Hypotheses state that net migration, earnings, education, percent in armed forces, and industry mix will exert positive effects whereas unemployment, percent inmates, residential segregation, and percent black will exert negative effects upon incidences of labor force participation. The above propositions are, of course, general and do not rule out the possibility of interaction effects. For example, some past related research shows evidence of age-migration interaction effects or a shift from positive to negative net migration - labor supply relationships with advancing age. This was presumably due to the inapplicability of any "demand for labor theory" and to the growing importance of retirement in higher ages (Baer, 1972).

A salient contribution of this study lies in the fact that empirical findings parallel those uncovered in similarly oriented research (Bowen and Finegan, 1969; Baer, 1972). Other principal or distinguishing features of this paper are: (1) Areal differentials in incidences of black labor force participation are analyzed and interpreted within a broad multivariate framework, (2) Leading independent variables, some of which have received limited treatment in the labor force literature, generally score meaningful and significant effects upon the dependent variable, and (3) Efforts are made to assess the impact of residential segregation on black labor force participation.

All remaining discussion entails an analysis and interpretation of empirical findings, conclusions, and an appendix on methodology.

Analysis and Interpretation of Empirical Findings

Tables 1 through 7 incorporate the statistical highlights of this analysis. Regression coefficients were given a one tail "t" test, upper tail or lower tail depending upon the direction of an hypothesized relationship. This was done so as to maximize the power of a test (i.e. the probability of rejecting the null if, in fact, a specific alternative or research hypothesis were true). Two tail tests were used where the signs of regression coefficients turned up contrary to hypotheses. Two models, one additive the other largely multiplicative, are discussed. Logarithmic transformations for net migration, armed forces, and inmates of institutions were not possible because of the occurrence of zero or minus values. For other variables, the multiplicative model yields elasticities which facilitate comparisons of effects of independent variables. All independent variables are designated in table stubs along with $\bar{R}^2$ which represents the coefficient of determination adjusted for degrees of freedom (Suits, 1963). The latter provides a measure of goodness of fit uninfluenced by the number of independent variables in any particular regression. Due to their theoretical and empirical prominence, net migration, earnings, unemployment, and education were included in all regressions. Other designated independent variables were similarily included whenever they helped to clarify observed relationships between independent and dependent variables, appeared significantly related to labor force participation, or appreciably enhanced that proportion of variance explained in the dependent variable.

Table 1. -- Regression Determinants of SMSA Differences in Labor Force Participation Rates of Black Males 14 to 19 Years Old, Regression Coefficients, Their t Values, and Partial Correlation Coefficients.

Independent variable	Natural values			Log values		
	Regression coefficient	t value	Partial correlation coefficient	Regression coefficient	t value	Partial correlation coefficient
X_1 Net migration rate of black males 14 to 19 yrs. old	0.18828[c]	1.95	0.279	0.00589[c]	1.73	0.247
X_2 Median earnings of black male experienced civilian labor force.....	-0.00065	-1.08	-0.160	-0.00227	-0.02	-0.003
X_3 Unemployment rate of total black male civilian labor force.....	-0.19853	-0.97	-0.144	-0.09278[c]	-1.78	-0.254
X_4 Median yrs. of school completed by black males 25 yrs. old and over.....	-0.05547	-0.10	-0.016	-0.13916	-0.75	-0.110
X_5 Percent of black males 14 to 19 yrs. old who are inmates of institutions.....	0.31227	1.44	0.210	0.01431	1.88	0.267
X_6 Percent of total males 14 to 19 yrs. old who are black	-0.14732[c]	-2.70	-0.374	-0.08466[c]	-3.22	-0.429
X_7 Index of dissimilarity.....	0.20427[d]	3.13	0.423	0.66359[d]	3.68	0.477
X_8 Percent of black males 14 to 19 yrs. old who are in armed forces.....	-0.09062	-1.56	-0.226	...	...	...
X_9 Percent of total black males employed who are in manufacturing	...	...	...	...	...	...
$\bar{R}^2$ Coefficient of determination	0.364[a]			0.391[b]		

a - All variables in natural values.
b - All variables, except X_1, X_5, and X_8, in logarithmic values.
c - Significant at .05 level or beyond under one tail test.
d - Significant at .05 level or beyond under two tail test.
... Independent variable omitted from particular regression.

Table 2. -- Regression Determinants of SMSA Differences in Labor Force Participation Rates of Black Males 20 to 24 Years Old, Regression Coefficients, Their t Values, and Partial Correlation Coefficients.

Independent variable	Natural values			Log values		
	Regression coefficient	t value	Partial correlation coefficient	Regression coefficient	t value	Partial correlation coefficient
X_1 Net migration rate of black males 20 to 24 yrs. old.....	0.18572[c]	3.20	0.426	0.00230[c]	2.97	0.405
X_2 Median earnings of black male experienced civilian labor force.....	0.00175[c]	1.82	0.259	0.15364[c]	2.34	0.330
X_3 Unemployment rate of total black male civilian labor force	0.01510	0.06	0.009	-0.00174	-0.07	-0.011
X_4 Median yrs. of school completed by black males 25 yrs. old and over.....	-2.60496[d]	-3.77	-0.486	-0.29495[d]	-3.24	-0.435
X_5 Percent of black males 20 to 24 yrs. old who are inmates of institutions	...	...	...	...	...	...
X_6 Percent of total males 20 to 24 yrs. old who are black	...	...	...	0.01087	0.89	0.131
X_7 Index of dissimilarity	0.04400	0.56	0.082	0.03779	0.47	0.223
X_8 Percent of black males 20 to 24 yrs. old who are in armed forces	0.06821[c]	1.69	0.242	0.00092[c]	1.69	0.244
X_9 Percent of total black males employed who are in manufacturing	0.04705	0.97	0.141	0.01244	0.78	0.115
R^2 Coefficient of determination	0.249[a]			0.217[b]		

a - All variables in natural values.
b - All variables except X_1, X_5, and X_8, in logarithmic values.
c - Significant at .05 level or beyond under one tail test.
d - Significant at .05 level or beyond under two tail test.
... Independent variable omitted from particular regression.

Table 3. -- Regression Determinants of SMSA Differences in Labor Force Participation Rates of Black Males 25 to 34 Years Old, Regression Coefficients, Their t values, and Partial Correlation Coefficients.

Independent variable	Natural values			Log values		
	Regression coefficient	t value	Partial correlation coefficient	Regression coefficient	t value	Partial correlation coefficient
X_1 Net migration rate of black males 25 to 34 yrs. old.....	0.08843[c]	3.13	0.415	0.00089[c]	2.89	0.389
X_2 Median earnings of black male experienced civilian labor force	0.00065[c]	1.97	0.276	0.04616[c]	2.18	0.302
X_3 Unemployment rate of total black male civilian labor force	-0.53919[c]	-5.03	-0.591	-0.04182[c]	-5.08	-0.595
X_4 Median yrs. of school completed by black males 25 to 34 yrs. old.....	-0.53833	-0.92	-0.132	-0.07024	-0.98	-0.141
X_5 Percent of black males 25 to 34 yrs. old who are inmates of institutions	-0.31255[c]	-3.54	-0.459	-0.00358[c]	-3.71	-0.476
X_6 Percent of total males 25 to 34 yrs. old who are black	...	...	...	...	...	...
X_7 Index of dissimilarity.....	...	...	...	...	...	...
X_8 Percent of black males 25 to 34 yrs. old who are in armed forces	0.21383[c]	4.57	0.554	0.00227[c]	4.47	0.546
X_9 Percent of total black males employed who are in manufacturing	...	...	...	...	...	...
R^2 Coefficient of determination	0.412[a]			0.417[b]		

a - All variables in natural values.
b - All variables, except X_1, X_5, and X_8, in logarithmic values.
c - Significant at .05 level or beyond under one tail test.
d - Significant at .05 level or beyond under two tail test.
... Independent variable omitted from particular regression.

Table 4. -- Regression Determinants of SMSA Differences in Labor Force Participation Rates of Black Males 35 to 44 Years Old, Regression Coefficients, Their t values, and Partial Correlation Coefficients.

Independent variable	Natural values			Log values		
	Regression coefficient	t value	Partial correlation coefficient	Regression coefficient	t value	Partial correlation coefficient
X_1 Net migration rate of black males 35 to 44 yrs. old	0.24840[c]	4.15	0.518	0.00262[c]	4.08	0.512
X_2 Median earnings of black male experienced civilian labor force.....	0.00094[c]	2.94	0.394	0.06612[c]	3.28	0.431
X_3 Unemployment rate of total black male civilian labor force	-0.39848[c]	-3.90	-0.495	-0.03178[c]	-4.14	-0.517
X_4 Median yrs. of school completed by black males 35 to 44 yrs. old	-0.18617	-0.66	-0.096	-0.02773	-0.90	-0.130
X_5 Percent of black males 35 to 44 yrs. old who are inmates of institutions	-0.33561[c]	-2.73	-0.370	-0.00390[c]	-2.98	-0.398
X_6 Percent of total males 35 to 44 yrs. old who are black	...	...	...	...	...	...
X_7 Index of dissimilarity	...	...	...	...	...	...
X_8 Percent of black males 35 to 44 yrs. old who are in armed forces	0.12476[c]	2.33	0.322	0.00142[c]	2.49	0.341
X_9 Percent of total black males employed who are in manufacturing	...	...	...	...	...	...
R^2 Coefficient of determination	0.399[a]			0.422[b]		

a - All variables in natural values.
b - All variables except X_1, X_5, and X_8, in logarithmic values.
c - Significant at .05 level or beyond under one tail test.
d - Significant at .05 level or beyond under two tail test.
... Independent variable omitted from particular regression.

Table 5. -- Regression Determinants of SMSA Differences in Labor Force Participation Rates of Black Males 45 to 54 Years Old, Regression Coefficients, Their t values, and Partial Correlation Coefficients.

Independent variables	Natural values			Log values		
	Regression coefficient	t value	Partial correlation coefficient	Regression coefficient	t value	Partial correlation coefficient
X_1 Net migration rate of black males 45 to 54 yrs. old.....	0.15916[c]	1.69	0.239	0.00117	1.08	0.156
X_2 Median earnings of black male experienced civilian labor force.....	0.00108[c]	2.82	0.381	0.06711[c]	2.58	0.352
X_3 Unemployment rate of total black male civilian labor force.....	-0.71154[c]	-5.72	-0.641	-0.05440[c]	-5.36	-0.616
X_4 Median yrs. of school completed by black males 45 to 54 yrs. old.....	0.72999[c]	2.39	0.329	0.08281[c]	2.45	0.340
X_5 Percent of black males 45 to 54 yrs. old who are inmates of institutions.....	-0.41292[c]	-2.20	-0.306	-0.00514[c]	-2.35	-0.324
X_6 Percent of total males 45 to 54 yrs. old who are black.....	...	...	...	...	...	...
X_7 Index of dissimilarity	...	...	...	...	...	...
X_8 Percent of black males 45 to 54 yrs. old who are in the armed forces	-0.56779	-1.93	-0.195	-0.00668	-1.94	-0.273
X_9 Percent of total black males employed who are in manufacturing	...	...	...	...	...	...
$\bar{R}^2$ Coefficient determination	0.499[a]			0.478[b]		

a - All variables in natural values.
b - All variables, except X_1, X_5, and X_8, in logarithmic values.
c - Significant at .05 level or beyond under one tail test.
d - Significant at .05 level or beyond under two tail test.
... Independent variable omitted from particular regression.

Table 6. -- Regression Determinants of SMSA Differences in Labor Force Participation Rates of Black Males 55 tc 64 Years Old, Regression Coefficients, Their t values, and Partial Correlation Coefficient.

Independent variable	Natural values			Log values		
	Regression coefficient	t value	Partial correlation coefficient	Regression coefficient	t value	Partial correlation coefficient
X_1 Net migration rate of black males 55 to 64 yrs. old.....	0.06774	0.33	0.151	-0.00014	-0.06	-0.008
X_2 Median earnings of black male experienced civilian labor force.....	0.00239[c]	3.70	0.471	0.14656[c]	3.05	0.407
X_3 Unemployment rate of total black male civilian labor force.....	-0.65442[c]	-2.80	-0.375	-0.07600[c]	-3.69	-0.474
X_4 Median yrs. of school completed by black males 55 to 64 yrs. old	1.89862[c]	2.42	0.329	0.09226	1.02	0.147
X_5 Percent of black males 55 to 64 yrs. old who are inmates of institutions	...	...	...	...	...	...
X_6 Percent of total males 55 to 64 yrs. old who are black.....	...	...	...	-0.02496[c]	-2.79	-0.377
X_7 Index of dissimilarity.....	...	...	...	...	...	...
X_8 Percent of black males 55 to 64 yrs. old who are in armed forces	-6.41442[d]	-3.03	-0.401	-0.10972[d]	-4.18	-0.520
X_9 Percent of total black males employed who are in manufacturing.....	...	...	...	...	...	...
R^2 Coefficient determination.....	0.375[a]			0.467[b]		

a - All variables in natural values.
b - All variables, except X_1, X_5, and X_8, in logarithmic values.
c - Significant at .05 level or beyond under one tail test.
d - Significant at .05 level or beyond under two tail test.
... Independent variable omitted from particular regression.

Table 7. -- Regression Determinants of SMSA Differences in Labor Force Participation Rates of Black Males 65 Years Old and Over, Regression Coefficients, Their t Values, and Partial Correlation Coefficients

Independent variable	Natural values			Log values		
	Regression coefficient	t value	Partial correlation coefficient	Regression coefficient	t value	Partial correlation coefficient
X_1 Net migration rate of black males 65 yrs. old and over....	-0.14212	-0.59	-0.085	-0.00647	-0.63	-0.092
X_2 Median earnings of black male experienced civilian labor force.....	0.00190[c]	1.74	0.243	0.01724	0.07	0.010
X_3 Unemployment rate of total black male civilian labor force	-1.17708[c]	-3.74	-0.475	-0.34558[c]	-3.52	-0.457
X_4 Median yrs. of school completed by black males 65 yrs. old and over.....	0.84487	0.60	0.086	0.12553	0.25	0.036.
X_5 Percent of black males 65 yrs. old and over who are inmates of institutions.....	...	...		0.02265	1.32	0.189
X_6 Percent of total males 65 yrs. old and over who are black....	...	...		-0.07132[c]	-2.00	-0.280
X_7 Index of dissimilarity.....	...	...		...	...	
X_8 Percent of black males 65 yrs. old and over who are in armed forces	...	...		...	...	
X_9 Percent of total black males employed who are in manufacturing.....	-0.10003	-1.90	-0.265	...	...	
$\bar{R}^2$ Coefficient of determination	0.216[a]			0.230[b]		

a - All variables in natural values.
b - All variables, except X_1, X_5, and X_8, in logarithmic values.
c - Significant at .05 level or beyond under one tail test.
d - Significant at .05 level or beyond under two tail test.
... Independent variable omitted from particular regression.

In general, the analysis lends support to the assumption that high levels of net migration facilitate greater investment expenditures in markets and subsequent upward shifts in demands for labor (reflected in rising wages and other benefits) which, in turn, induce higher labor force participation. (Greenwood, 1981, p. 146). Expected positive net migration - labor force participation relationships occur in age groups ranging from 14 to 19 years to 45 to 54 years where net migration regression coefficients are positive and significant. Interestingly the statistical efficacy (in terms of magnitude of relevant t values) of these relationships increases steadily from ages 14 to 19 years to 34 to 44 years with some decrease manifest in ages 45 to 54 years. Migrants or potential migrants in the youngest age group are largely secondary inasmuch as decisions to move are made by adult members of their respective families of orientation whose mobility may be deterred by community/job attachments or simple inertia. Also, adolescents are predominantly marginal to the work force. As they move into higher adult ages, however, their growing social and economic independence and responsibilities coupled with accelerated job mobility should markedly strengthen net migration - labor supply relationships. In higher age groups (55 to 64 years and 65 years old and over) the impact of net migration fades possibly because of a growing inclination of blacks to reduce their worker participation and gravitate toward retirement or quasi retirement centers.[2] Findings of past related research (showing negative and highly significant net migration effects for these very same age groups) suggest that such a mechanism a fortiori characterizes white and total males (Baer, 1970 and 1972). But the situation observed here is rather ambigious since net migration effects "wash out" among older blacks. This may be partly due to socioeconomic privations which militate against

early (or even later) reductions in work activity or outright retirement. In any event, it seems that countervailing influences associated with work and retirement net out in regressions leaving no evidence of net migration - labor supply relationships among blacks in the two highest age groups.

As predicted, the impact of earnings across labor markets is positive and significant. This holds for all age groups, except 14 to 19 years, and concurs with the assumption that market earnings opportunities (revealed by earnings of experienced workers) are a net incentive positively related to labor force participation (Bowen and Finegan, 1965). The additive and multiplicative models generate similar results in terms of direction and levels of significance of regression coefficients. However, the black labor supply appears highly inelastic to change in average earnings. All earnings elasticities fall well below unity. The lack of an earnings - labor supply relationship among blacks 14 to 19 years old suggests that "substitution effects" may operate to offset any positive and significant relationship. For given a direct association between earnings and family income (and assuming that the distribution of youths by family income is constant across SMSA's) then youths of affluent families may be disposed to substitute school or leisure for work activity.

For all age groups, except 20 to 24 years, aggregate unemployment exerts negative and significant influences upon labor force participation. Again, both models produce like results; and, as in the case of income, unemployment elasticities range (-.002 to -.346) well below unity. The findings provide added credibility to the "discouraged worker hypothesis" which has received extensive support in past related studies (Long, 1958; Bowen and Finegan; 1969; Sullivan, 1978). The underlying thrust of this hypothesis is that the direct experience of joblessness and/or an awareness of widespread joblessness in the labor market contribute to discouraged worker

effects which, in turn, facilitate reduced labor force activity. More detailed treatments of the nature of black unemployment as well as its impact upon black worker participation can be found in the writings of Killingsworth (1968) and Wilson (1978).

Much of the above discussion has drawn attention to major independent variables which score theoretically consistent and extensive effects upon worker participation rates. In contrast, the performances of all remaining independent variables are generally erratic or less impressive. First, education regression coefficients or elasticities turn up statistically significant in only three age groups: 20 to 24 years, 45 to 54 years, and 55 to 64 years. In the first age group the signs of relevant coefficients are surprisingly negative and highly significant (.01 level or higher) under a two tail test. In the remaining two age groups education - labor supply relationships are in the expected direction (positive) and significant. The latter agree with findings of earlier related research (Bowen and Finegan, 1969; Barth, 1967) and with the assumption that high levels of education give rise to a proliferation of job opportunities, particularly ones with attractive career ladders, which encourage high levels of labor force participation. Through time, technological innovations in large metropolitan areas have stimulated the growth of new highly skilled occupations. Concomitantly, employers have stressed the functional importance of education. Given these developments, expanding and highly technical industries may be especially inclined to locate in markets where average education is relatively high. But such theorizing appears to have rather limited applicability here inasmuch as positive education effects materialize in only two age groups. The isolated as well as inconsistent impact of education is perhaps indicative of its changing role in the workplace. Indeed, several analysts have marshalled evidence seriously challenging the "credentialism" thesis (Berg, et al 1970).

Inmate regression coefficients or elasticities are in the expected direction (negative) and significant for three age groups: 25 to 34 years, 35 to 44 years, and 45 to 54 years. These results concur with those of an earlier study (Baer, 1972) and with the notion that widespread social disorganization (as measured by percent inmates) will generate relatively large numbers of blacks (other than inmates) unable or unwilling to join the labor force because of physical or psychological infirmities. Of course, the suitability of percent inmates as a proxy for areal ill health is dubious. Its use does assume that proportions of SMSA black inmates residing outside a designated SMSA, just prior to their incarceration, are negligible or that numbers of such inmates are proportional across SMSA's. Neither of these assumptions may be correct. Another contributory aspect of this variable lies in the fact that its inclusion in regressions tends to substantially enhance coefficients of determination. For example, in the multiplicative model, $\bar{R}^2$ increases from 0.262 to 0.417 for men 25 to 34 years old and from 0.359 to 0.422 for men 35 to 44 years old when percent inmates are added in regressions. Finally, since they could not be extricated from measures of net migration, inmates also serve, here as a control variable. It was believed that the "partialling out" of inmate effects on the dependent variable would attenuate distortions of observed net migration - labor supply relationships due to areal differentials in migration streams of inmates. The influx of inmates over the migration period could be especially heavy in SMSA's (e.g. San Bernadino-Riverside-Ontario) containing disproportionately large inmate populations.

Some theorists (Blalock, 1957, 1967 and Glenn, 1963) believe that as the relative size of a minority group (e.g. blacks,) increases intergroup competition for scarce resources (i.e. desirable employment, promotions, etc.) intensifies and leads to more discrimination against minority group members. Enhanced racial discrimination practiced against blacks in the workplace may

then be expected to culminate in heightened work alienation and subsequent reductions in labor force participation. Analytical evidence in this study to support such theorizing occurs only among adolescents (14 to 19 years), men 55 to 64 years old, and the aged (65 years old and over) where color mix (percent black) elasticities are negative and significant. In all cases, however, black labor supply is essentially unresponsive to change in color mix; relevant elasticities fall well below unity. The above mentioned relationships, along with absence of percent black - labor supply relationships in other ages, is suggestive of age-color mix interactions. Adolescent blacks, newcomers to the job market, may be especially sensitive to unfamiliar discriminatory practices of employers, fellow workers, or extant unions. Coupled with this, black youths (vis a vis their adult counterparts) are generally under less social and economic pressure to work and are more apt (where racial discrimination is pronounced) to engage in substitute activities involving school or leisure. In higher age groups, excepting 55 to 64 years old and 65 years old and over, color discrimination may be seen as an "acceptable" part of the "system" or something "we have to tolerate" inasmuch as work becomes a necessary and predominant activity. With respect to men 55 to 64 years old and the aged, increased racial discrimination in employment may facilitate a "burn out" process along with a growing inclination to participate in extra work activities or retire.

Much research has been done on the nature of residential segregation in urban settings (Taeuber and Taeuber, 1965; Farley, 1977). But very few studies have examined the impact of housing segregation on minority group labor force participation within any broad analytical framework. Concerned investigators have advanced a number of reasons why blacks might be especially disadvantaged and discouraged from seeking higher status.

jobs in communities where racial segregation in housing is marked (for example, see Kain, 1968). To begin with, the distance to jobs and the difficulty in obtaining jobs away from black residence areas may entail high costs. Second, blacks may have less information and less opportunity to learn about jobs remote from their residences or those of their friends. Finally, in response to real or imagined pressure from "white customers", employers outside of black areas may discriminate against minority males. Although the preceding imply negative residential segregation - black labor supply relationships such anticipated relationships failed to surface in this analysis. Observed segregation (index of dissimilarity) effects are limited to blacks aged 14 to 19 years where the relevant regression coefficient turns up unexpectedly positive and significant: a result which may be (1) an isolated aberration due to inadequate conceptualization of the segregation variable (e.g. "ghettoization" or concentration of blacks in one or relatively few large areas is not considered), (2) faulty measurement or (3) explicable in terms extant theory. If the latter is true then the high levels of housing segregation coupled with high levels of teenage labor force participation may mirror a family or collective response to reduced opportunities for full time, continuous, and adequately rewarding work desired and needed by male or female family heads. Subsequent family economic distress may force other family members (i.e. adolescents) to enter the job market. This interpretation clearly highlights the importance of the family as a unit of analysis in labor force research and the need for pertinent data at lower levels of aggregation (e.g. employment status of family members by age, relationship, race, and SMSA).

From the point of view of theory and findings of past research (Long, 1958 and Baer, 1972) positive armed forces - labor supply relationships were anticipated. Relatively large armed forces installations can enhance em-

ployment opportunities, stimulate the growth of ancillary industries via increased investment, and lead to rising consumer demands. Such conditions, in turn, should induce disproportionately large numbers of blacks to enter or remain in the labor force. Positive and significant armed forces effects, consistent with the above assumptions, are evident among men aged 20 to 24 years, 25 to 34 years, and 35 to 44 years. Inexplicably, a negative and significant armed forces - labor supply relationship characterizes men 55 to 64 years old. In some cases the inclusion of percent armed forces in regressions substantially increases the $\bar{R}^2$. Illustrative is the age group 25 to 34 years (multiplicative model) where the addition of armed forces in the regression increments $\bar{R}^2$ from .186 to .417. Percent armed forces also functions as a control variable introduced in an effort to further clarify net migration - labor supply relationships. Although armed forces are extricated from net migration rates, it was not practicable to similary extricate men who, as a result of military separation during the migration interval 1965 to 1970, left an SMSA primarily to rejoin their respective families. Since this might offset positive net migration - labor supply relationships in SMSA's with large military installations, it was deemed advisable to enter armed forces in regressions. In fact, the addition of this variable does appear to strengthen the statistical relationship (in terms of relevant t values) between net migration and labor force participation for men aged 20 to 24 years.

The last designated independent variable, industry mix or percent of employed who are in manufacturing, fails to score any significant impact upon incidences of labor force participation. This is at variance with results of past related research and underlying theoretical assumptions (Baer, 1972) stipulating positive manufacturing - labor supply relationships.

Some have contended that a predominance of manufacturing in a market leads to extensive unionization providing blacks with greater employment opportunities, job security and fringe benefits (Masters, 1975); and the latter could be expected to facilitate high levels of worker participation. Finally, it was felt that the presence of industry mix in regressions might reduce the liklihood of spurious positive earnings - labor supply relationships. Indeed, the relationship between earnings and labor supply is weakened somewhat when percent in manufacturing is entered in the regression run for men aged 20 to 24 years (the t value for the relevant elasticity decreases from 3.04 to 2.34).

Conclusions

To a large extent, empirical findings concur with hypotheses. Regressions generate expected positive net migration - labor supply relationships and earnings - labor supply relationships for most age groups. Exceptions, age groups where such effects are not present, seem to be explicable in terms of extant theory. Aggregate unemployment has a negative impact upon the labor force participation rates of all age groups (except 20 to 24 years) providing further support to the discouraged worker hypothesis. Other designated independent variables perform less impressively. Education scores expected positive effects upon black labor supply in two age groups: 45 to 54 years and 55 to 64 years where average educational levels are relatively depressed. Such isolated evidence furnishes meager support to the notion that "demand for education" plays an extensive and effective role in the workplace. The findings also suggest that positive education effects relate only to very low levels of educational attainment (e.g. some elementary school vs. completed elementary school). Percent inmates and percent armed forces, which serve partly as control variables, have expected negative and positive effects, respectively, upon incidences

of labor force participation. Notable, too, is the fact that both of these variables substantially enhance the proportion of explained variance when they are included in regressions run for men in central age groups. As anticipated, color mix or percent black elasticities turn up negative; but these are found only in extreme age groups (14 to 19 years, 55 to 64 years, and 65 years old and over): a pattern partly interpreted in terms of the marginality of young and older blacks. Influences of remaining independent variables, residential segregation and industry mix, largely or altogether fail to materialize.

In spite of the highly suspect quality of black data (Siegel, 1974), this analysis yields a sizable number of meaningful relationships between selected independent variables and black labor force participation rates as well as coefficients of determination (deflated or adjusted for degrees of freedom) which attain respectable magnitudes (ranging from .217 to .499). The findings, however, are intended as only suggestive. A number of questions have been raised throughout this research. For example, one such question rivets attention on the role of family characteristics in efforts to clarify earnings and residential segregation effects. Perhaps future analyses will provide some answers and hopefully help to narrow the gap in our knowledge of determinants of black male labor force participation.

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Notes

[1] In view of the important role of migration in labor market research, the present analysis limits itself to 54 large SMSA's (total populations of 500,000 or more) for which appropriate migration data are available.

[2] Pertinent is the fact that net migration rates for blacks in advanced age groups and in "Sunbelt SMSA's" (e.g. Jacksonville, San Antonio, San Diego) tend to be well above corresponding average net migration rates for all SMSA's; also, labor force participation rates for these very same age groups (55 to 64 years and 65 years and over) generally fall well below corresponding average labor force participation rates for aggregate SMSA's

Appendix on Methodology

Initially this study included some independent variables as well as alternative measures of independent variables which were discarded during the course of the analysis. Illustrative are: (1) region, a dummy variable (South vs non South), which was found to be strongly intercorrelated (-.816) with earnings; earnings was retained since it was felt that its effects could be more readily interpreted and compared with findings of previous research, (2) white unemployment rates which proved ineffectual in regressions and (3) correlation ratios, an alternative measure of residential segregation, which were highly intercorrelated (.800) with indexes of dissimilarity. The latter, more widely used in past research as an indicator of housing segregation, was utilized as the final measure of black residential segregation and is based upon tract household data for SMSA's. For two reasons direct standardization was introduced as a supplement to the multiple regression methods of analysis. First, it facilitates the "freezing" of extraneous influences arising from individual rather than aggregate relationships. Also, its use obviates the need of adding control variables in regressions and consequently sacrificing degrees of freedom. Standards used were typical of relevant SMSA subpopulations. Where i = a designated characteristic (e.g. school enrollment) to be standardized and j = a particular age group (e.g. 14 to 19 years) then the i^{th} composition of a variable (in this case labor force participation) was standardized for the j^{th} age group with the selected standard comprising the i^{th} composition of the j^{th} age group for 54 SMSA's taken as a whole.

The discussion below describes measures of remaining specified variables (other than residential segregation already mentioned above).

Labor force participation, relates to April, 1970 and is measured by

the number of males in the civilian labor force divided by the male civilian noninstitutional population expressed as a percentage. Labor force participation rates for blacks 14 to 19 years old and 20 to 24 years old were standardized for SMSA variation in school enrollment composition and rates for men in higher age groups were standardized for areal variation in marital composition. Age specific net migration rates refer to the period April 1, 1965 to April 1, 1970. Each rate was calculated by taking the algebraic difference between SMSA in-migrant and out-migrants of a given age group as a percentage of the same age group. Civilians abroad and not reporting residence in 1965, and armed forces are excluded from the computation of net migration rates. Fairly specific definitions or measures of other independent variables are given in stubs of text tables 1 through 7. Finally, in order to hold constant any distortions arising from areal differentials in occupation mix, median earnings were calculated from occupation standardized earnings distributions; and aggregate unemployment rates were standardized for areal variation in labor force age composition.

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